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General Articles.

Senecio Poisoning.*

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AND

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The very interesting paper by Drs. F. C. Willmott and G. W. Robertson in *The Lancet* of Oct. 23rd, on cases of Senecio Poisoning in man in South Africa has suggested to us that the results obtained by us some years ago may interest a wider circle of readers than those of the technical journals in which our papers* were published. At the same time some corrections and additions may be made in the accounts of our pharmacological work.

Senecio poisoning has been known for some years to be the cause of a characteristic form of liver cirrhosis in cattle and horses in Canada, where it is known as Pictou disease, in South Africa (Molteno disease) and in New Zealand (Winton disease). The connexion between the disease and the plants was first established by the careful experimental work of Gilruth, Chase, and Pethick, an account of whose work may be found in the paper of the senior author already cited. The chemistry of the *Senecio latifolius* was investigated by one of the present writers under Professor Wyndham R. Dunstan's direction, and resulted in the isolation of two alkaloids, senecifoline and senecifolidine, which were examined by pharmacological experiment, and were found to induce the same effects in animals as had previously been described by the veterinary investigators of the disease in cattle. Very large doses caused acute poisoning marked by excitement and convulsions from stimulation of the higher divisions of the central nervous system. But these were not of so much interest as the symptoms which followed from a single medium dose, or better from small doses repeatedly given by the mouth or subcutaneously. These corresponded closely with the disease arising from feeding the plant to laboratory animals or cattle, and also with the symptoms described by Drs. Willmott and Robertson. The onset was slow, no effects following the injection of a single dose for several days; the animal then began to lose weight, diarrhœa and vomiting, general weakness, staggering gait and apathy followed, developing into stupor with low temperature, and final failure of the respiration. Blood was often vomited or passed in the stools, and was almost invariably found in the stomach and bowel post mortem. A certain amount of ascites was generally present in cats, and sometimes this was very marked, the abdominal cavity containing large quantities of bile-stained fluid. Congestion of the stomach and duodenum with masses of black blood was present, whether the poison was given by the mouth or hypodermically. The liver was swollen and congested, and microscopically many of the liver cells were found in a state of degeneration, while the interstitial tissue was swollen and infiltrated with round cells which extended between the liver cells. The whole organ presented the appearance of early cirrhosis; the small laboratory animals did not live long enough to develop the later stages described in cattle, but there could be no doubt that the symptoms were of the same character. The gall-bladder and ducts were filled with dark very viscous bile which could be pressed into the gut only with some difficulty.

These experiments were all performed with the alkaloids of *Senecio latifolius* of South Africa, and showed conclusively that these alkaloids are responsible for the disease there known as Molteno disease. We then took up the study of the *Senecio Jacobœa* or ragwort, using samples grown in this country and in Canada, where it is the

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cause of Pictou disease. To our surprise these caused no symptoms in animals, and in a previous communication it was suggested that this might arise from errors in the collection or drying of the plants. Many subsequent experiments with *Senecio Jacobœa* grown in Canada or in different parts of this country from Morayshire to Surrey have always shown it to be poisonous to animals; plants collected from the stage of seedlings to the final withering and dried and prepared in different ways have proved poisonous in doses which were practically equal. And one of us has succeeded in isolating from the Canadian *Senecio Jacobœa* alkaloids which, while differing in some chemical properties from the alkaloids of *Senecio latifolius*, resembled them in toxicity and in the symptoms induced experimentally. We are, therefore, quite unable to suggest why the first experiments failed to poison animals, but we withdraw the statements on the subject made in the previous paper. The *Senecio Jacobœa* of Canada and of this country is equally poisonous with the *Senecio latifolius* of South Africa, induces the same symptoms, and owes its toxicity to related alkaloids. Other species of the genus *Senecio* were examined. *Senecio silvaticus* proved inactive in one set of experiments, but later was found poisonous, though perhaps less so than the *Senecio Jacobœa*. *Senecio vulgaris*, the common groundsel, resembled the *Senecio Jacobœa* in toxicity and symptoms.

Ragwort (*Senecio Jacobœa*) and groundsel are very common plants all over England and Scotland, the bright yellow ragwort giving a blaze of colour to waste-lands everywhere. It is therefore remarkable that ten years ago when I made inquiries of the Board of Agriculture no case of cattle-poisoning from ragwort in this country was known, though Sir Stuart Stockman was familiar with its effects in the Colonies, and had made special inquiries as to the occurrence of the disease here. During the war, however, he wrote that an outbreak had occurred in England, and one of us, on examining an extract of the ragwort in the hay on which the cattle had been fed, found it produced the typical action in rats. The rarity of the disease in England appears to be due to the abundant hay crop. When this is deficient, and contains an undue amount of ragwort, as occurred during the war on the farm in question, there results the same disease as is known at Pictou, where the plant is apparently widespread, and in South Africa in drought when the animals are driven to eat the plant which they generally avoid.

The British Empire, however, does not seem to have a monopoly of this disease, for F. V. Holmboe wrote one of us in 1915 from Lyngdal in Norway, where the *Senecio Jacobœa* is very abundant, and where cattle died of a disease called "Sirasyke," which presented the characteristic symptoms of senecio poisoning. Details are given in his article in the *Norsk Veterinaertidsskrift*, 1915; apparently the farmers of his district always suspected a connexion between the ragwort and the disease, and this now seems to be fairly established. Holmboe suggests that the disease also occurs in Denmark.

The extension of the incidence of senecio disease from cattle and horses to man by Drs. Willmott and Robertson's valuable observations may draw attention to a form of poisoning which has not yet received the attention it deserves. In conclusion, it may be added that there is not the least probability of cases being met with in man in countries in which agriculture and milling are even moderately developed. Senecio is not met with in our wheatfields nor in those of the countries from which we draw our wheat, and our milling processes would remove its seeds from the corn if it were present. Senecio poison can only reach the flour when the winnowing is carried out by the most primitive methods.

Human and Comparative Medicine.

The Inevitability of Fusion.

The medical correspondent of the *Observer* contributes to his paper the following interesting reflections on the claims of veterinary science, which are, he says, aroused by the reading of a valuable paper, "Observations on some of the diseases of animals communicable to man," read by Major F. Hobday, C.M.G., before the Royal Society of Medicine recently, and to be found in the *Veterinary Record* for March 5th and March 12th.

"The impatient young medical student, set down to the study of botany in his first year, and eager, mayhap, to learn the technique of amputation at the hip-joint or Cæsarean section, asks why he should thus be delayed. The answer given to me by Professor Bayley Balfour, F.R.S., a quarter of a century ago, was not, as might be supposed, that plants are largely used as medicines—a fact of relatively small and diminishing importance—but that in the plant the laws of life, which are the laws of all life, may be studied in their

simplest and most intelligible form. It is a great lesson, and none the less true nowadays, when Sir Jagadis Chundra Bose, F.R.S., the famous Indian physicist, can demonstrate the phenomena of, say, fatigue or rest or alcoholic intoxication in a carrot or turnip as readily as in ourselves.

The supreme example of the value of comparative medicine is, of course, the life-work of Louis Pasteur. We recall his triumphant study of a malady of the vine, among plants, and of many maladies amongst animals, such as the silk-worm, the sheep and the dog—until finally, thanks to his previous work, and to that alone, he was able to save mankind from hydrophobia and, through his pupils, from nearly all the principal ills that human flesh is heir to. Every subsequent advance in medicine has extended and enhanced the claims of the botanist, the plant pathologist, the zoologist and the veterinarian, to essential places in the scheme of modern medical science.

The essential value of the paper does not lie, however, in the authoritative and striking account of such diseases as rabies, anthrax, glanders and, above all, tuberculosis. Its real significance lies in its demonstration of the fact that to-day human medicine cannot be separated, either in theory or practice, from comparative medicine. Professor Hobday is assuredly right when he concludes that "in the combat against disease the workers in human and veterinary medical science go over much ground in common. By working in unison much valuable time may be saved and much better results would be attained than if each kept itself in its own watertight compartment." Sir D'Arcy Power, in the discussion, said that, in a recent visit to France, he learnt how the doctors and the veterinarians had been closely associated for eighty years with mutual benefit, at which we should aim here. No medical man who knows the alphabet of the history of his knowledge, above all as we owe it to Pasteur, can hesitate to endorse the idea of Professor Hobday, that by means of a mixed section of Comparative Medicine in the Royal Society of Medicine, or otherwise, the practitioners of human and animal medicine should meet and discuss together the problems which both have to solve and neither can solve alone. If the immortal nineteenth-century names of Spencer and Darwin, Huxley and Pasteur, mean anything, we of the twentieth century should scorn the snobbery or stupidity that tend to maintain the factitious and hampering barriers through which those pioneers of organic evolution and general biology strode as giants alone could do in their day, but where pigmies may do well to follow now.

The Veterinary Record.

14th May, 1921.

THE ANNUAL GENERAL MEETING.

This year the annual general meeting of the members of the Royal College of Veterinary Surgeons is to be held at noon on June 2nd, in Edinburgh, at the Royal (Dick) Veterinary College, Summerhall. It is unfortunate that, when the profession wished to compliment its president in this way, there should be the unforeseen difficulty of a coal strike to threaten interference with the success of the meeting. We trust, nevertheless, that members will make a special effort to be present in Edinburgh to support the president and to make the meeting one such as he will be able to look back upon with pleasure and pride. This is but the fourth occasion in the seventy-eight years of the existence of the College that the annual general meeting has been held out of London. The first instance was in 1880, when Principal William Williams was president. The meeting was held at the Freemasons' Hall, Edinburgh, and sixty members attended. Again, in 1904, when Professor W. Owen Williams was president, the meeting was held in Edinburgh, in the rooms of the Highland and Agricultural Society, and was attended by 40 members, including 17 from England. The third occasion was when Professor A. E. Mettam was president in 1912, and the meeting was held in the theatre of the Royal Dublin Society, Kildare Street, Dublin, thirty members being present, including eight from England. These records are easy to beat, and we trust they will be beaten, in spite of the more difficult times in which we live.

This year's meeting will be held at the newly-built Royal (Dick) Veterinary College, Edinburgh, and an opportunity will thus be afforded to members to inspect the building during the course of the day. The council has decided not to hold an official dinner, but we understand that, if circumstances permit, an unofficial dinner will be arranged, to which guests may be invited. All Scots members who can conveniently do so, should attend, to show their appreciation of the fact that the meeting is held in Scotland, and to do honour to the president, who is at the same time

principal of the oldest veterinary college in Scotland—older by 20 years than the Royal College of Veterinary Surgeons itself. We believe Principal Dick would have been proud to think, when he started his modest school, now nearly 100 years ago, that the time would come, when its principal should be president of a united profession, and that the school itself should be the venue of the annual general meeting. Southern members should also conceive it a duty to be present if at all possible, and they would thus be paying a sincere compliment to their northern brethren. In this connection, attention may be called to the suggestion put forward by the secretary, in our issue of last week, for the booking of seats for those travelling from King's Cross on June 1st. We hear that the 10 a.m. train will now leave at 9-50, being combined with the 10-10 a.m. train to Leeds. Dining cars will be attached to the Edinburgh portion only. Members would do well, however, if the coal strike continues, to make particular enquiries as to alteration of train times.

The main business of the meeting is the election of nine new members of council, voting papers for which will be issued on the 19th inst., together with a copy of the annual report. Of the eight retiring members, two are not seeking re-election, and owing to serious ill health, Mr. Lawson, whose term of office expires in 1923, has been compelled to resign. There will thus be in any event an addition of three new members to the council. We give again, side by side, the names of the six members nominated for re-election and the names of the five new candidates :—

J. H. Carter.	W. S. King.
J. McI. McCall.	G. H. Livesey.
J. McKinna.	J. W. McIntosh.
W. J. Mulvey.	P. J. Simpson.
T. S. Price.	T. F. Spencer.
S. H. Slocock.	

Abstracts and Reviews.

Veterinary Training for General Practice.

An American Appreciation.

The ultimate end of veterinary study is the prevention and relief of disease among animals, and it is this end that justifies the study of veterinary science. The ultimate end is not the creation of a field for the exploitation of the individuals who may pursue its study, but for the good of the public as a whole, of which the veterinarian is a part. From this statement it should not be understood that the ultimate end is one of philanthropy, for the practice of veterinary science is a business conducted for profit, the same as any other legitimate commercial enterprise. The sale by the practitioner of his services makes his position no less justifiable or economically secure. The very fact that the practitioner has been able to exist and prosper more or less is evidence that he satisfies a want in industrial economy. How well he satisfies this want depends upon how thoroughly he is able to meet the needs of the community he serves. The better he serves his community the more he prospers financially. His ability to serve depends in a great measure upon his knowledge of what veterinary science can and can not do, and upon his judgment and diplomacy in presenting his ideas.

A successful practice, then, does not depend alone upon knowledge of veterinary science, but upon other factors as well. If I were to enumerate, in the order of their importance, the requisites for a successful veterinary practice, I would place them something like this : (1) Location ; (2) personality of the practitioner ; (3) knowledge of veterinary medicine. I do not wish to be understood as believing that knowledge is of little value or that a successful practice can be built up without it, for such an idea is far from my thoughts. I simply want to bring out the fact that there are other prerequisites. A man with a fair knowledge of veterinary science and a good personality in a good location will do more veterinary work than a man with the best veterinary knowledge and a poor personality located in a community where veterinary work is not so plentiful or necessary. Give this same man with the best veterinary knowledge a good personality, and place him in the same location where veterinary services are in demand, and he will do the community more good and prosper more than the man with a fair knowledge of his science. I simply want to bring out that knowledge of veterinary science is just one prerequisite for successful practice. Other things being equal, the more knowledge the better the practitioner.

Locations can not be influenced to any great extent and are largely a matter of selection. Personality is an abstract something inherent in the individual and can not be influenced to any great degree by training. Knowledge of veterinary medicine is entirely a matter of training, depending to a greater or less degree upon individual ability to learn. The qualification, then, that can be shaped is knowledge of veterinary science.

There are at least three factors the character of which have determined the young veterinarian's knowledge when he receives his coveted "sheepskin" on graduation day. They are (1) the physical plant or equipment of the college ; (2) the teachers ; (3) the course of study.

It is not the intention in this short paper, nor is it the writer's province to discuss these factors in detail ; they are largely problems of pedagogics and require solution by those pedagogically inclined and experienced. However, pedagogics is a means to an end and not an end, the end in this particular instance being to turn out a product that will best serve a practical purpose, namely, a practising veterinarian. The practitioner is best familiar with the problems he has to meet, and may well suggest to the teacher what they are and possible means of meeting them.

It is with this thought that this short paper has been written.

College Equipment.

The question of college equipment will only be touched upon briefly. It has been pretty conclusively proved, by the closing of most privately-operated veterinary colleges, that medical training according to modern approved methods can not be carried on at a profit. The cost of equipment is too great. It is sufficient to state that for best results equipment must be adequate and of the best.

Teachers.

A great deal depends upon the class of teachers. These may be divided into two classes—those that teach pre-clinical branches, and those that teach clinical branches. Under pre-clinical branches will be included such subjects as chemistry, biology, pharmacology, pathology, anatomy and physiology, while the clinical branches include the subjects of medicine, surgery and obstetrics with their various subdivisions. Pre-clinical teachers might well be specialists in their particular branches. Clinical teachers should by all means be men of broad training and experience in the practice of the profession as related to their special branch. By this it is not meant that they should devote the major part of their time to practice and teach as a side issue. If a veterinarian is to do justice to teaching, he can not devote the major part of his time to making emergency veterinary calls. He should, however, "keep his hand in" by treating clinical cases. In no way can the writer see how a teacher can become familiar with the problems met in practice, except by meeting them in actual practice.

The Course to Study.

The course of study may be divided into pre-college, college and post-college. It is not the intention to discuss these in detail, but in a very general way. The details are a matter of pedagogics.

Pre-College Training.

The pre-college training is of vast importance. To take up properly the study of veterinary medicine the student must have a certain amount of preliminary training. The four-year high school requirement of the American Veterinary Medical Association is none too high. The case of the poor boy with deficient preliminary training has been used as an argument for low entrance requirements, but when closely scrutinized this argument is found to be a justification of the poor school rather than the poor boy.

A teacher in a veterinary college once made a remark to the writer something like this: "Before we had our high-school entrance requirement we got many students of mature years with considerable worldly experience and judgment who knew what they came to college for and made good in college and after graduation. Our entrance requirement now keeps many of these men out, and in their place we get high-school graduates lacking in mature judgment and without any definite idea of what they need to learn or expect to do when they graduate."

I have often thought of that remark, made by a man of wide experience in teaching veterinary students and, for whose judgment I have the profoundest respect. The thought has now come to my mind that possibly our requirements were not quite high enough. Possibly the added requirement of college training in English, chemistry, biology and physics would help eliminate this immaturity and indefiniteness of purpose by adding years to the age of the student. Surely it would tend to turn out a better finished product. But the time is probably not ripe for such a requirement. The time will come when our best veterinary colleges will require some college training for entrance.

College Training.

Veterinary college training may be divided into pre-clinical and clinical. The pre-clinical training is a preparation for the clinical study of medicine, surgery and obstetrics, and consists in the study of such branches as anatomy, physiology, pharmacology, pathology, etc. The better training the student has in these fundamental branches the better practitioner he will make. The science of veterinary medicine is nothing more than the application of known facts of chemistry, biology, physiology, pathology, etc., to the treatment and prevention of disease in animals. Veterinary medicine is no longer a system of memorizing symptoms with their antidotes, but a science based upon known facts. A practitioner cannot have too much knowledge of the basic sciences.

We often hear the remark that these things are all right for the "scientific" veterinarian, but the practitioner needs something more practical. The terms "scientific" veterinarian and "laboratory" veterinarian have somehow become synonymous in the minds of many, in contradistinction to "practitioner." This raises the question as to which is of higher scientific value, laboratory findings or clinical observations. We are "apt to call pathology real, or pure, or more or less accurate science, as against presumably unreal, or impure, or more or less inaccurate clinical data." The "scientific character of a procedure depends not upon where or by what means facts are procured, but altogether on the degree of caution and thoroughness with which observations are made, inferences drawn and results heeded." Laboratory investigations and practice are "one in spirit, method and object." One can be as scientific as the other, and both classes of veterinarians need a good knowledge of the basic sciences. Both are or should be scientific.

The character of the college clinical training is what determines to a great degree whether the prospective practitioner enters practice gracefully or awkwardly. While it is recognised that college begins rather than ends a practitioner's training, still the character of his clinical training will in a great measure determine the first impression he makes upon his clientele.

The object of our clinical training should be to *learn* and *learn how*. The "learn how" is where most of our graduates are deficient when entering practice. It is a sad sight to observe the impression a veterinary practitioner makes upon a good horseman by beginning an examination of a horse for soundness by starting at the caudal end of the animal. The writer had this experience, and it was very humiliating later to have a stable "flunky" demon-

strate the method of examination and approach of a horse recognised by horsemen as standard. A client judges a veterinarian largely in terms of what he himself knows, and if the veterinarian bungles these common things, the client is very apt to think his knowledge of scientific things is bad.

There are so many seemingly insignificant things as compared to the general principles of veterinary medicine, which mean so much to the young practitioner, that are not given the attention they should be given in colleges. These things are nothing more nor less than technique, and should be taught religiously, not to the exclusion or at the expense of other more scientific subjects, but in addition to them. Everyone admires good technique, whether it is in a pianist, a ball player or a veterinarian. Students should be drilled in these practical things until they become second nature and a matter of habit. Such things as animal restraint, bandaging, methods of clinical examinations, post-mortem examination, etc., might well come under this class. The idea is not to carry these things to extremes at the expense of the more fundamental principles so as to make an artisan of the student, but enough time should be given to these practical things to familiarise the student thoroughly with them.

We often hear that this or that school is a good theoretical institution, while another is a practical school paying less attention to the theoretical part of veterinary science, the idea being that the latter institution is the one for the prospective practitioner. There is no logical reason why theoretical training and practical training should be incompatible. The idea is not to teach less theory and more practical things, but to teach more of both. Our agricultural clients are beginning to demand a more finished product than formerly. The dentist when he leaves college is able to do a good job of filling a tooth, and the veterinarian should be just as able to do the technical part of his job as to make a diagnosis. The subject of animal husbandry is one that should not be neglected. A stockman is apt to think that if a veterinarian does not know a healthy animal he is not apt to know a sick one. The breeder of dairy cattle, for instance, has a higher regard for the professional ability of a veterinarian who knows breed, type and what are good butter-fat records than for the practitioner who is ignorant of these things.

The college has another mission to fulfil in the teaching of the more scientific branches of the science; the "learn" of the science is as important as the "learn how." Successful clinical training depends upon clinics. It is not mere numbers of cases but variety that determines the effectiveness of the clinical teaching. A large surgical clinic cannot compensate for lack of medical or obstetrical material. It is in the clinic that the student correlates his preliminary training with practice. The greater variety of clinical cases a student has seen and studied at college the better he is equipped to give good service to his clients.

Post-College Training.

Our brother, the physician, spends some time following graduation as an interne in a hospital. He realises the value of more clinical training than can be gotten from his regular college courses. So, too, the veterinary practitioner should avail himself of an opportunity to perfect himself following graduation. There are few well-equipped veterinary hospitals, so the only recourse the recent graduate has is to affiliate himself with some good practitioner with experience. Not only is this of value in developing technique and in observation of clinical cases, but it gives the young graduate a bird's-eye view of practice as a whole, showing the relationship of the scientific to the commercial.

If there is any one thought that the writer has tried to bring out in this short and rather incomplete paper, it is that the better trained a veterinarian is, both practically and scientifically, the better practitioner he makes.

(HERBERT LOTHE, paper presented at the 57th Annual Meeting of the American Veterinary Medical Association, Columbus, Ohio, August, 1920. (*Journal A. V.M. A.*, 1920, December, Vol. 58, No. 3, pp. 262—267.)

Clinical and Case Reports.

Vaccine Therapy in General Practice.

By W. M. SCOTT, F.R.C.V.S., Bridgwater.

Case I.—FISTULOUS WITHERS.

Pus received from "a very stubborn case" of fistulous withers, in charge of G. Gorden, Esq., M.R.C.V.S., Newport, Mons. Organisms present were streptococci and staphylococci. From these an autogenous vaccine was made and six ampoules of graduated alternated doses forwarded.

Report.—The vaccine was useful, as the case made a splendid recovery. I had, of course, good drainage all the time.

Case II.—INTERDIGITAL CYST.

Materials received from H. J. R. Pope, Esq., M.R.C.V.S., London, in a case of interdigital "cysts" (dog). Organisms present, un-named bacillus and diptheroid. From these an autogenous vaccine was made, and six ampoules, 1cc. capacity, containing graduated sterile doses forwarded.

Report.—The dog I inoculated with your vaccine I think benefitted, but still has recurring swellings; not so often and perhaps not so severe.

Writing a year later, Mr. Pope states: "Patient has been much better—only has an undeveloped cyst very occasionally, whereas formerly he was rarely, if ever free."

Case III.—STREPTOTHRICOSIS.

A Manchester veterinary surgeon wrote to me as follows:—"I have a grey mare in the infirmary at present on which I wish to try an autogenous vaccine. She was admitted a fortnight ago, suffering from breakings out on the poll and buttocks, with considerable œdema of the abdomen. The swellings are hard and indurated, and exude what looks like pure pus. I am wondering if melanosis is the cause—the subject being a grey mare."

Microscopical examination demonstrated the presence of a streptothrix, and a growth of this

organism was obtained later in pure culture, from which an auto vaccine was prepared. Six ampoules were forwarded, the first three being sterile and the others attenuated.

Report.—Seven months later:—"You will be interested to hear the mare for which I had the vaccine did very well. I noticed a distinct improvement after the third injection, and by the time the course was completed all suppurative conditions had ceased and the animal was in much better condition and spirits. The mare was then turned out to grass and only brought up last week, and the owner has just informed me on the telephone that she is working and doing well, and he can see no signs of the unsightly sores."

Case IV.—Fistulous Withers.

The subject (in the care of an Otley practitioner) was a four years old cart gelding, suffering from an old standing bilateral fistula of the withers which had been operated on four times and had setons inserted.

Organisms present were streptococci, stapylococcus aureus, diptheroid bacillus. Six ampoules auto-vaccines were despatched, Nos. 1 and 2 sterile, No. 3 attenuated, Nos. 4, 5 and 6 virulent.

Report.—I have used the vaccine you sent me for the fistulous withers according to instructions, but I am sorry to say without results. I think the disease was too far advanced, because when I cut down under the scapula I found evidence of pus on both sides. The flow of pus never seemed to slacken, and I believe a fresh abscess was forming when we destroyed the horse. However, should I have another case in the future I will employ your vaccine earlier.

Association Reports.

Dumfries and Galloway Veterinary Association.

A meeting of this Association was held at Dumfries, on Tuesday, 1st February, 1921.

The following members were present:—Messrs. A. Edgar (Whithorn), president; Lindsay (Dumfries), vice-president; McEwen (Wigtown), Waddel (Castle-Douglas), McKenzie (Annan), Little (Thornhill), Macalister (Kirkcudbright), secretary and treasurer. Visitor: Mr. Young (Dumfries).

The minutes of last meeting were read and approved.

Apologies for absence were read from Mr. Baird (Dumfries) and Mr. Pollock (Lockerbie).

A communication from Professor Gofton was read, intimating a meeting of the Scottish National Veterinary Association at Edinburgh on the following day. The Chairman announced that the time being so short it was impossible that they could be represented at that meeting.

Mr. Lindsay brought up the matter of a member to represent the Scottish practitioners on the council, and said if that association could get the support of other associations they might be able to have a representative. He thought Mr. Inglis, of Forfar would stand if asked, and could get the support of the various associations.

After discussion, it was agreed that the secretary communicate at once with Mr. Gofton to put this matter before the National meeting on the following day for their consideration.

Mr. Lindsay said that he understood that Sir John McFadyean was introducing a vaccine for joint-ill, which he intended supplying to Shire owners on the condition they get their veterinary surgeon to vaccinate the animal. Mr. Lindsay objected very much to this procedure, on the ground that he had no doubt very soon the owners or their stud grooms would supply themselves with a syringe and do it themselves, and thought it was the duty of Societies all over to protect their own interests and to protest to Sir John McFadyean and write him to reconsider the matter and to supply the vaccine as the Board of Agriculture supply anti-abortion. It was unanimously agreed to write Sir John McFadyean on the subject, and also to communicate with Professor Gofton to lay the matter before the Scottish National meeting on the following day.

A letter was read from the North of Ireland Veterinary Society *re* the new motor taxation. The president said that he thought that it was useless to move in the matter, and moved that the letter lie on the table. Agreed.

Mr. Waddel asked the president if he knew how we stood as regards the yearly fee or subscription to the National Veterinary Association Limited. As far as he knew, he had only got the receipt for his subscription to the *Veterinary Record*, and would like to know what was the constitution now and whether there were any other benefits to be derived except the *Veterinary Record*.

The Secretary pointed out to Mr. Waddel that he really did not know how the members stood as regards the National constitution—whether Mr. Waddel was an individual member or whether the Society was affiliated under the new constitution.

The President stated that things were a little unsatisfactory, that information was scarce, but that if they gave the National Council a little more time, everything would be made plain. It was agreed to leave the matter at that and live in hope.

The President thought that it would be a good thing for the Society to buy some books, now that they were in funds, for circulation amongst the members. Mr. Lindsay thought instruments that were not often required should be purchased and used by the members of the Society. Notice of motion was given to this effect by Mr. Lindsay, to be brought up at next meeting.

This concluded the business.

The following paper on "Notes on some of the Diseases of the Nervous System in Cattle" was then read by Mr. Lindsay, in the absence of the author, Mr. J. W. Pollock, Lockerbie:—

Parturient Paresis.

I think there is no doubt that there are two types of this disease—the comatose and the violent or spasmodic. The latter, however, may and often does merge into the former gradually, and a comatose condition usually follows violent symptoms; it is even very desirable that a sporific condition should quickly follow the violent convulsive symptoms. With this object in view it is my usual custom to give ʒi. doses of chloral, the intervals between the doses varying according to the severity of the symptoms. Often one dose is enough, but I remember one case which was so violent that it was found to be impossible to get the udder inflated. I prescribed ʒi. doses of chloral at intervals of one hour until six doses had been given. This had the desired effect, the cow slept soundly for about twelve hours and recovered without any inflation of the udder. I consider that in the violent hyperæsthetic type of the disease, chloral is of more value than inflation. It is the only drug which I give to ordinary cases, in which, if there is excitement, a dose of chloral in addition to the inflation will hasten recovery. Occasionally I get a fatal case of milk-fever, the subjects, without exception, being very fat plethoric cows. They appear to come out of the comatose condition, but are never able to rise. I have employed all the usual methods of treatment in these cases, including the electric current, but without success. I now advise slaughter for beef at the end of three days, because after that time passive

congestion of the lungs, with a rise of temperature, usually commences.

Eclampsia in Cattle.

This disease usually makes its appearance about six weeks or so after parturition, when the cow is yielding her largest quantity of milk per day, and the same type of cow is liable to the disease as in "milk-fever." The first symptom usually noticed is that the cow is persistently licking something, such as the wall in front of her or turning her head round and licking her shoulder. The milk yield is less, and the appetite is capricious, the excretions being normal. Within a few hours slight twitching of the head and eyelids is observed, with continual movement of the tongue and jaws and some salivation, some lashing of the tail and a general uneasiness. When the cow is approached the twitching is more evident and there is a general nervousness.

If medicine is administered at this stage, the cow will sometimes throw herself down during the operation and apparently go into a "fit"—lying on her side with head extended and limbs rigid, jaws tightly clenched together, grinding of the teeth and salivation. If the limbs can be flexed and the cow "propped up" in the natural recumbent position the "fit" will usually pass off, and the remainder of the medicine may be given with the cow recumbent. If treatment of the case is now neglected, within a few more hours the symptoms just described become continuous, and the cow dies in violent tonic spasms and evidently in great agony. My treatment consists in giving 1oz. doses of chloral hydrate for 24 hours, at intervals according to the severity of the case, followed by full doses of potass. bromide for another 24 hours, and afterwards, when the hyperæsthesia is followed by depression, I give nux vomica, etc.

Myelo-Meningitis.

This disease, "trembling," or "louping ill," is not uncommon in cattle on farms where it is prevalent among the sheep. The symptoms noticed at the outset are those of hyperæsthesia and excitability. On approaching the animal it appears to be very much frightened, and when touched it twitches or trembles violently. The disease is almost always confined to young cattle. If the animal is loose and made to walk, the hind legs may be lifted jerkingly as in stringhalt, and all the legs are moved stiffly and uncertainly. In some cases there is the condition of torticollis, the head being turned round to one side, and when the head and neck are straightened and then released, the head immediately turns round to the same side again. If the animal is disturbed much after the symptoms of hyperæsthesia have been observed, such as by giving medicine, it will usually fall down and immediately be stretched out on the ground in clonic spasm, just as is sometimes seen in eclampsia. The animal is lying on its side with all four legs extended and so rigid that it is impossible to flex them; the jaws are clenched tightly together with grinding of the teeth and salivation. In some cases there is violent squinting of the eyelids. After the convulsion passes off, the animal still lies stretched out on its side and, if an attempt is made to prop it up, it immediately goes off into another convulsion. If not treated, these convulsions become more frequent and the spasms may become tonic, when the case often resembles one of tetanus. If the animal recovers from these convulsions, paralysis, which is usually localised, is the result; it may be of one leg or of two.

Treatment.—Usually when I have been called to a case I have found the animal lying on its side with head and neck extended and all the limbs stiff and rigid. If an attempt is made to get the animal propped up so as to lie in the natural position, it immediately goes off into a convulsion, which continues about 10 minutes. I have found the best treatment to be to allow the animal to remain lying on its side meantime, and to give large doses of chloral at intervals of about two hours according to the severity of the case, until about six doses or so have been given. The chloral usually produces sleep, and next day the animal is found to be easier and more relaxed. In some cases it may now be propped up in the natural position, but in severe cases this cannot as a rule be done till the following day. I now give six doses of potass. bromid (ʒiv. to ʒvi. each dose, according to age) during the next 24 hours, and if there is a rise of temperature, which is the rule in severe cases, I conjoin ʒi. doses of acetanilide with the bromide. After the 24 hours' course of bromide, I usually prescribe ʒi. doses of acetanilide with concentrated acetate of ammonia, giving a course of eight doses or so to be extended over two days—four doses each day. After the 24 hours' course of bromide, even a severe case can be propped up in the natural position and will drink. After the course of acetanilide and acetate of ammonia, the animal usually will commence to eat a little hay or other food, and the appetite now improves each day. After all hyperæsthesia has disappeared, the animal will often not be able to rise for several weeks, and during this time I prescribe nux vomica in the form of the liquid extract.

As the cause of "trembling" or "louping ill" has not yet been definitely ascertained, the following may be of interest. A calf fell into a water trough on a very cold day, had evidently not been able to get out by its own efforts; and, when discovered and released, was a considerable time before it was warm again. The case is interesting, I think, because "trembling," though not severe, commenced a few days after the accident.

A Case in a Two-Year Old Colt.

This case occured on a hill farm, which is badly infected with "louping-ill," or "trembling," in sheep. James Law, in his "Veterinary Medicine," vol. iv., states that "the succession of symptoms in 'louping-ill,' or 'trembling,' in sheep are in the main such as are observed in other cases of myelo-meningitis." As there was no other cause of the disease to be discovered in this case, I came to the conclusion that it might be the same as "trembling." W. Williams states that he has heard of cases of "trembling" in horses. The symptoms were very pronounced. When I first saw the colt, he was standing, "propped" on his legs, and he walked somewhat stiffly and very uncertainly—just like what is commonly called "staggers." In a day or two, hyperæsthesia and oposthotonus were well marked and there was a slight rise of temperature. The back had become quite hollow, and the colt trembled violently when approached and touched. When walking the fore feet were lifted up quickly with a jerk and brought to the ground again uncertainly, whilst the hind quarters swayed unsteadily. A few days later, paralysis followed and the colt was destroyed, but I had not the opportunity of making a post-mortem examination. The treatment was chiefly eliminative, the initial purgative having a good effect in emptying the bowels.

Cœnurus Cerebralis.

In cattle, "sturdy" usually occurs in animals under two years of age. The symptoms at first are abnormal timidity and nervousness, without apparent cause, followed by dullness and stupor. The stirk, when at grass goes away by itself and usually moves restlessly about, keeping to the fences of the field. Alternate subsidence and intensification of the symptoms at this stage is not uncommon. If the hydatid is in the most common position—in one of the cerebral hemispheres and over the lateral ventricle, the stirk soon begins to turn to the same side in its wanderings and there is usually blindness in the opposite eye, due to pressure on the optic thalamus or other part. If a hydatid is present in each hemisphere, the stirk will turn to that side on which the pressure is most severe at the time. If the cœnurus is in the median line, between the hemispheres or in the cerebellum, the head is elevated and the animal advances in a straight line until stopped by some obstacle, the limbs being moved jerkily and uncertainly; if the stirk falls, it may not be able to rise for a considerable time, and it may be found drowned in a ditch. In these latter cases there may be blindness in both eyes. As the hydatid grows larger,

the animal eats less and less, until finally it becomes so weak that it is unable to rise and dies from starvation.

Treatment.—In my experience, this has been usually successful if the hydatid is in one of the hemispheres, otherwise I do not attempt any. In cattle, of course, there is no softening at a point of the cranial bone directly over the hydatid as in sheep. I usually postpone operation as long as I can, because when the hydatid is large there is a much better chance of getting at it. I remember once operating successfully on a stirk, which was comatose when I arrived. When the hydatid has grown large, the frontal sinus over it is obliterated by the pressure, and after trephining the meninges are pressed into the opening.

At the commencement the hair over the front of the cranium is clipped off as bare as possible and the skin washed and scrubbed with soap and disinfectant solution. If the two sides are now carefully examined, a slight elevation may be discovered on the side in which the hydatid is present, according to symptoms. If so, I trephine over this elevation, which is almost always about an inch or less from the median line. After washing and examining the part, I inject hypodermically cocaine or novocaine. These preliminaries are done with the animal standing. I then proceed to secure the stirk on the ground, and the head is elevated on a bundle of straw. Two incisions in the form of the letter V are made and the triangular portion of skin enclosed is separated from the bone and held back with a small hook or otherwise by an assistant. After trephining the meninges usually appear at the opening, and I cut through these, and the wall of the hydatid is often punctured at the same time, the fluid escaping through the opening. When trephining, care must be taken that the trephine does not plunge through into the brain when the bone is cut through. To prevent this I have a shield fixed on it. After the meninges have been cut through, and if the hydatid cannot be seen, a crotchet needle is a useful instrument to insert through the opening and below the meninges, to try to secure it and draw it to the opening, when it can be caught with forceps and punctured. The hydatid must be punctured because it is much too large, when distended, to be drawn out. When once it has been seized with the forceps, care must be taken that the hold is not lost, because if the empty cyst slips back into the large cavity which it occupied, it is difficult to get hold of it again. On this account two forceps are useful for drawing it out, keeping a short hold to prevent it breaking. If the wall of the hydatid is all removed it is of no consequence if some of the fluid is left in the cavity. A little iodoform is now dusted into the opening, the flap of skin is turned down and stitched closely, the edges of the stitched skin being sealed up with iodoform in collodion. In my experience, all my cases in which I have been successful in removing the hydatid, have recovered. In these cases, it is remarkable how quickly health and vigour are regained after the cause of the disease has been removed. The operation on sheep is more simple than that on cattle. I have operated on sheep with just a knife and a pair of forceps; of course the bone was very thin and softened over the hydatids.

Discussion.

The PRESIDENT thanked Mr. Pollock for the paper. It was an extremely interesting one, especially the part dealing with the subject of "sturdy." With two of the subjects—"trembling' and "eclampsia"—he could not say he had had much experience. It might be staggers, and he found a dose of medicine put them right. I was difficult to diagnose sturdy, trembling, eclampsia and meningitis.

Mr. Pollock had treated the subject well. He had found no trembling in Wigtownshire. They all know that the pastures in some districts were worse than others. Operations for sturdy were very good, and very often successful. The usual sturdy instruments he found very satisfactory. The cyst could be drawn out with the syringe and there was no danger of it dropping back. In milk fever, chloral hydrate was not necessary. The mere fact of pumping up the udder quietened the animal. Chloral might be useful sometimes, but had very bad results. Mr. Pollock seemed to give strong doses—in his opinion far too large. Six ounces in six hours was too much.

Mr. WADDEL said his experience was that fatal cases occurred in uncleaned cows. He had tried cleaning them and not cleaning them, and had bad results both ways. Eclampsia he treated with a good dose of physic.

Mr. LITTLER remarked that in his country, unless the animal got a dose of physic in milk fever, it invariably went down again.

Mr. MACKENZIE thought that too much chloral was not good in milk fever.

Mr. LITTLER did not think that there were two kinds of milk fever. The violent stage was simply the first stage.

Mr. MILLIGAN considered that 1½ ounces of chloral even was too much. Trembling he had seen in a horse, and it showed signs of stringhalt and staggering.

Mr. YOUNG stated that he did not agree with chloral administration, nor did he believe in drenching at all—pneumonia generally resulted.

Mr. MCEWEN thought that in cows which were unable to rise after milk fever, this might be due to injury to the head and legs. He had seen red water associated with trembling.

Mr. LINDSAY said there were several points of interest in the paper, and it was a pity Mr. Pollock was not present. One point, especially, was that after the comotose stage had passed and the animal unable to rise, Mr. Pollock advised slaughter. This he thought was rather premature—after so much chloral this might occur. He inflated the udder in milk fever cases, and he mentioned one case in which he had done so; the cow taking milk fever on the Friday and being inflated each day, rose at night until the following Wednesday, when she was slaughtered, owing to weakness. Chloral was not generally used now. Eclampsia appeared in from five to nine days after calving, due to the fœtal membrane partly enclosed in the womb, and absorption of sceptic material. He had seen good results from opening the vein below the eye and letting the animal bleed. However, several died. By treating the cause of the disease, which begins in the uterus, good results were obtained. Mr. Pollock gave chloral; he quite agreed, if the animals were outrageous, but not in such large doses as Mr. Pollock suggested, 1½ ounces was quite sufficient. Mr. Pollock allowed the cow to lie on her side for a few days; his experience was that if they did so they would have great difficulty in getting them up again. In sturdy, he had very unsatisfactory results with trephining. He found it difficult to locate the cyst under the thick bone.

The PRESIDENT moved that the meeting record a vote of thanks to Mr. Pollock for his paper and that the Secretary write Mr. Pollock to that effect, and hoped that he would be at the next meeting to answer the criticisms. He wished some other member to read a paper at the next meeting, some common subject, rather than a scientific paper, more interesting and profitable to the country practitioner.

Mr. YOUNG (Dumfries) was proposed as a member by the secretary, and seconded by Mr. Edgar.

The next meeting was fixed to be held in August. Mr. Lindsay entertained the members to tea.

Every day a stately gander in Alabama (says an American Exchange), with his breast full of sympathy and his head full of responsibility, leads an aged and totally blind ox to a pond for water. The gander, walking just in front, quacks now and then in order that the sightless ox may follow, and when the pond is reached the gander stands guard while his protege drinks his fill. When the ox has finished drinking, the gander leads him back to the field.

Notes and News.

Royal College of Veterinary Surgeons.

WAR MEMORIAL FUND.

The secretary begs to acknowledge the receipt of the following additional donation:—

	£	s.	d.
Aldershot Army Veterinary Association, per Capt. F. C. Minett	10	0	0
Previously acknowledged	914	0	6
	£924	0	6

Royal College of Veterinary Surgeons.

FELLOWSHIP DIPLOMA.

An examination for the Fellowship Diploma was held at the College, 10 Red Lion Square, London, W.C.1., on Saturday, May 7th, 1921. Three condidates entered, and the following were successful:—Frank Ware, I.C.V.D., subject, "Helminthology"; George Howie, Birmingham, subject, "Medicine." Examiners: Prof. R. Stewart MacDougall, M.D., D.Sc., and A. W. Noel Pillers, F.R.C.V.S. for Helminthology; H. J. Dawes, F.R.C.V.S. and Prof. J. Penberthy, F.R.C.V.S. for Medicine.

W. J. MULVEY, *Chairman.*

Discussed in the Commons.

IRELAND AND FOOT-AND-MOUTH DISEASE.

Sir A. Griffith-Boscawen, Minister of Agriculture, replying to Captain Redmond, said:—The Department of Agriculture and Technical Instruction for Ireland reports that no case of foot-and-mouth disease has been discovered in Ireland after tracing contacts to the animals from Ireland, which were visibly affected with the disease soon after their arrival at ports in Great Britain. It has been decided to modify existing restrictions as from midnight, Wednesday, May 4th. Fat animals for purposes of slaughter within 72 hours will then be admitted at Glasgow, Manchester, Bristol (Cumberland Basin), and at Birkenhead as soon as dsiinfection is completed. Stores will be admitted at certain ports for isolation for seven days at the ports, and thereafter will be licensed to premises for a further seven days' detention, which must be in enclosed yards or buildings. The Irish Department has been notified.

Sir A. Boscawen (Minister of Agriculture), replying to Major Barnett (Co. U., St. Pancras, South-West), said the Ministry had already arranged with the French Government to ensure the slaughter of horses intended for fodd before shipment, and were endeavouring to make similar arrangements with the Dutch and Belgian Governments. It would be advisable to wait until the result of these arrangements was seen before proposing fresh legislation. This country had a very valuable export trade in fit horses, which ought not to be lightly interfered with, but if we could prevent cruelty to worn-out horses without interfering with that perfectly *bona-fide* trade, that, he believed, was a right course to be pursued.

Foot-and-mouth Disease in Yorkshire.

The existence of foot-and-mouth disease has been confirmed amongst animals at Thurstonland, near Huddersfield. The usual precautions are being taken to prevent the spread of disease from this new centre of infection, and the Minister of Agriculture and Fisheries has made an Order prohibiting the movement of animals over a large area round Thurstonland.—*Ministry of Agriculture and Fisheries, 3rd May,* 1921.

Foot-and-Mouth News.

Owing to the outbreak of foot-and-mouth disease at Thurstonland, near Huddersfield, the district within a 15-mile radius was last week declared an infected area, and in consequence the Chief Constable of Wakefield had to close the market in that town. When the order was issued virtually all the fat cattle for sale were either in railway trucks in the sidings or in fields near the market place. No cattle or sheep could be moved, and the butchers and dealers were held up from before nine o'clock until after one o'clock in the afternoon.

Protests were made against the action of the Ministry several speakers stating that 99 per cent. of the animals to be offered had not been nearer to the source of infection than they were at that moment. Ultimately permission was given for the sale of the cattle in the fields, a condition being that they were to be slaughtered within the 15 mile radius.

The Irish Cattle Trade Association have passed a resolution protesting against "the action, or inaction, of the Ministry of Agriculture in allowing hay and straw from Cheshire, where foot-and-mouth disease exists, to be supplied to Irish cattle at Birkenhead," and against "the extraordinary attitude of the Ministry in holding up the entire Irish cattle trade because it cannot be proved that foot-and-mouth disease exists in Ireland."

A member said he was informed on most reliable authority that the cattle landed and held up at Birkenhead were supplied with hay and straw from Cheshire, where foot-and-mouth disease was rampant. He immediately wired the Ministry of Agriculture, and also the Department, calling attention to the matter. The Department replied asking if he was aware if such hay and straw was used in Birkenhead.

The Chairman said it had been proved that the disease does not exist in Ireland. Other members regarded it as a deliberate attempt to destroy one of the few remaining industries in Ireland, and as part of the plan to pave the way for the removal of the embargo on Canadian cattle by giving the promoters an argument to show that their country was free from disease while Ireland was infected.

Dropwort Poisoning in Cattle.

A mysterious case of cattle poisoning took place recently at Lochmaddy, in North Uist, resulting in the sudden death of four valuable animals—three Ayrshire cows and a stirk, says the *Northern Chronicle.*

These cattle, belonging to a resident in Lochmaddy, were out grazing on the Sunday afternoon, and when brought home and tied up for the night were all right. On the attendant going into the byre on Monday morning two of the cows were seen to be in a dying condition and showing symptoms of great pain. These two died in a very short time, and the third animal suddenly took ill and died in the same way. At this time the fourth animal was eating quite freely, but all of a sudden was struck down with the same mysterious trouble and died in a few minutes. All the animals died within the short space of half-an-hour. Mr. Kennedy, the organiser for the North of Scotland College of Agriculture, was called in, and, on examination of the dead animals, concluded this was a case of vegetable poisoning.

These cattle were grazing near land newly trenched and containing on the surface what looked suspiciously like the roots of the water dropwort, a very poisonous plant, proving fatal when the roots are eaten even in small quantity. To verify this point, portions of the stomach and some of the suspected roots were sent to Mr. Brown, of the veterinary department of the Agricultural College at Aberdeen. In the course of a few days word came back that the animals were poisoned by eating the roots of a variety of the water dropwort.

The loss of valuable animals by the eating of the roots of a common weed in the Hebrides is a warning to all

landholders to take steps to clear their land of all noxious weeds.

Council Employees Summoned.

HORSES WITH CANKERED FEET.

A case of alleged cruelty, heard by the Aldershot magistrates on April 25th, presented the unusual feature that the defendants were employees of the Urban District Council summoned in respect of two of the Council's horses at the instance of the N.S.P.C.A.

William Cook and Arthur Kinchin were summoned for cruelty to the horses, while John Edwards, manager of the sewage works, and James Neave, surveyor to the Council, were summoned for causing cruelty to the animals.

An N.S.P.C.A. inspector stated that when seen, Kinchin was in charge of a dark bay which 'hopped as it walked,' from pain due to a discharging frog of the near fore, while Cook's horse was very lame on the near hind leg, the foot being very badly cankered. Witness pointed it out to Mr. Edwards, who said, "I have told Mr. Neave about them both. We cannot get a day's work out of them. They are only sent down here when they are no good on 'top.'" Witness subsequently saw Mr. Neave, the surveyor to the Council, and said to him, "I stopped two horses belonging to the Council, working in an unfit state, in Ash Road this morning." He said, "Yes, I know they are cankery, but you know what this saving stunt is. I have been expected to have been allowed the money for them this last half year."

Messrs. J. A. Cunningham, M.R.C.V.S., Guildford, and C. F. Hulford, M.R.C.V.S., Haslemere, spoke to what they described as the unquestionably cankered condition of the horses' feet.

Mr. Neave said that the smith told him one of the horses could be made alright by special shoeing. Edwards asked him to replace one, but he had not the money.

Mr. Edwards had not, he said, had complaint or warning from the N.S.P.C.A. during the 25 years he had held the position of sewage works manager.

Mr. J. R. Carter, veterinary surgeon for Council said the treatment of the Council's horses was very good indeed. He examined the horses when required, and the two horses in question on April 1st. The bay horse was affected with cankered feet, and having had the shoes removed, it was going very feelingly. The dark bay, which had not been shod, he saw on the meadow and on the road. He found its limbs very good indeed, considering its age. There was a slight contraction of the fore feet, and a certain amount of heat. It was fit to work. It had since been shod with leather, and it would make £45 to-morrow if put into the market.

In cross-examination, witness said it was fourteen days before he was called in to see the horses after the Inspector of the R.S.P.C.A. had examined them. The light bay should be destroyed.

Mr. Longfield Lacey, veterinary surgeon, said he examined the horses on April 20th. The bay horse, if properly shod, could work on a farm. The dark bay was also fit for land work if shod with a leather sole.

In cross-examination, witness said he did not agree with anyone keeping horses with cankered feet.

Summonses against all those defendants interested in the dark bay horse were dismissed. With regard to the light bay horse, the magistrates thought that greater care should have been exercised in looking after the animal, for it had a disease which grew worse and worse. The Bench were of the opinion that the Council did not exercise sufficient care in watching the progress of the disease, and allowed the horse to work longer than was necessary, and longer than it should have been allowed to work. Cook should have known, and probably did know, that the horse should not have worked, and would be fined a nominal fine of 10s.

Mr. Neave, the surveyor, was fined 21s., the Chairman remarking that if the inspector had acquainted Mr. Neave with the facts of the horse's condition and suggested that it be not worked again, it would undoubtedly have been taken off the work it was on.

Meat Inspection Reform.

The facts recorded by Dr. Leighton's report (issued by the Scottish Board of Health) on the subject of a uniform standard and system of meat inspection show, says the *North British Agriculturist*, that there is ample justification for the demand that a remedy should be provided for the existing chaotic conditions. "It is," continues the writer, "an absurd anomaly that, whilst the Foreign Meat Regulations demand a certain standard of inspection and judgment of all meat imported into this country from overseas, equal protection against the risks of consuming diseased meat is not provided for within our own shores. The only explanation of the fact that 'no meat had ever been condemned' in certain towns and districts is that the meat is not inspected, for it is only too well known that the most scrupulous care in the selection of fat stock will not exclude the risk of purchasing an animal which, on slaughter, is found to be extensively affected with tuberculosis. Too often in the past inspection has been entrusted to those possessing insufficient knowledge of disease processes, the consequences of which have been manifested by laxity on the one hand with inadequate protection of the public, and on the other undue severity with consequent unnecessary and avoidable loss. The general application of the recommendations of the various committees would mark a long step forward towards order out of the existing confusion. The procedure of inspection is laid down in detail, and a definite standard is set up as a basis for judgment. The suggestion that actual condemnation should be entrusted wholly to inspectors possessing the scientific training and qualifications essential to sound judgment will meet with support and approval, whilst the selection of these officials from the veterinary profession, as indicated in the report, will tend materially to promote confidence.

Dr. Leighton was fortunate in the *personnel* of the committees selected by the Scottish Board of Health to assist him in his inquiry, and the Board is to be congratulated on the lead which it has given in the matter of setting up a uniform system and standard of meat inspection, and in taking the initial step for the removal of a standing reproach to this country of lagging behind America and our Continental neighbours in this important matter."

Air-borne Virus Investigation.

Light on the part airmen can play in the work of finding whether the virus of foot-and-mouth disease is air-borne from the continent was shed by Sir Stewart Stockman, chief veterinary officer to the Ministry of Agriculture, in a recent interview with *The Weekly Dispatch*.

"I should like to contradict the general impression, entirely erroneous, that the airman's job will be to hunt for these disease germs in the clouds," said Sir Stewart. "This is the popular misconception which has got about and has given rise to imaginary pictures of squadrons of aeroplanes cruising about in search of the elusive virus. "The part airmen might play in the research work is to ascertain at periods when outbreaks occur whether there existed negative air pockets over infected areas—which would account for the air-borne virus floating along, suddenly dropping to earth.

"When you have simultaneous outbreaks in such places as far apart as Surrey and Northumberland, with no possible connection except perhaps through the still mysterious agency whereby the virus travels long distances and in certain directions, it is the only possible solution one can arrive at.

"We have already had the fullest assistance from the meteorological office of weather reports, wind pressure, and general air conditions, and it only remains for the aviator to complete the study.

"Research is still in the preliminary stage, and it might take years before any definite results are obtained, but I am convinced, however fanciful it seems, that the air-borne virus theory is the most favourable one we have."

Notable Friesian Herd Success.

The awards in the All-England and Wales herd competition for the 500 gs. gold challenge cup, presented by Messrs. R. Silcock and Sons, Liverpool, to encourage milk-recording and the grading-up of stock, were made known at a committee meeting in London of the Central Council of Milk-Recording Societies, under whose auspices the competition has been carried out.

The visits of the competing herds occupied nearly a week of strenuous work, and the adjudicators travelled about 1,500 miles. Judging was based on a scale of points, which took into account milk yield, the physical merit of the stock, and the number of animals bred by the exhibitor. The points were based on the number of cattle retained in the competing herds throughout the year.

The challenge trophy, together with a replica, has been awarded to Mr. Horace Hale, Findown, Worthing, for a herd of pedigree Friesians, which realised an average of 1477.43 points; 2nd—Mrs. J. W. Hill, Mulbarth, Norwich, Red Polls (unregistered), 1240.25 points; 3rd—Messrs. W. and E. G. Carter, Fois Bank, Cholmoubston, near Nantwich, pedigree Friesians, 1208.48 points; 4th—Mark Walker, College Farm, Hothersall, near Preston, Shorthorns (first pedigree), 1038.24 points; 5th—University College, Reading, non-pedigree Shorthorns, 1035.83 points; 6th—S. Blundell, Bendish House, Welwyn, Herts, pedigree Lincoln Reds, 1013.65 points; 7th—R. Skinner, Stretchford, Devon, pedigree South Devons, 1011.31 points.

Although the judges were shorthorn fanciers, they were immensely impressed with the magnificent character of the winning herd of pedigree Friesians. The cows and heifers, they state, were of excellent type, showing well-balanced udders, with great milk capacity, and were symmetrical animals in excellent condition. They were clean and well-housed, and it was evident that great care was given in the matter of feeding, as well as to all other points of management. The herd was a great credit to its owner and breeder, and a worthy winner.

The gold cup and medals were presented at the first annual dinner of the Central Council of Milk-Recording Societies, held in London on April 28th, when Sir Arthur Griffith-Boscawen, Minister of Agriculture, and Sir Gilbert Greenall attended.—*North British Agriculturist.*

Further Lessons from the Pedigree Census.

The "Census of Pedigree Live Stock," prepared and published by the Ministry of Agriculture in connection with the scheme for improving the live stock of the country, remarks the Agricultural Correspondent of *The Times*, is instructive and suggestive. It is not claimed that the returns are complete, but they are nearly enough to serve as a guide in appreciating the registration system in different counties and of different breeds.

The first noteworthy point is the small proportion of the aggregate live stock that has been registered or, presumably, is eligible for registration. According to these figures less than 2 per cent. of the cattle and pigs, and less than 4 per cent. of the sheep and horses, have their lineage recorded in the respective breed registers. The fact that the percentage of cattle and pigs is smaller than that of sheep raises suspicion about the accuracy of the records, but, on the other hand, every reasonable means was taken to give breeders an opportunity to make returns of the pure-bred stock they possess, so that responsibility for whatever imperfection exists must lie with stockowners themselves. Considering, however, that about 86 per cent. of the members of the breed societies responded to the appeal for assistance in preparing the statement, it must be assumed that the figures have a certain educative value in respect of the popularity of the registration principle. The general attitude towards recorded pedigree is improving. This is shown, we are told, by the experiences of the Ministry's inspectors, and it is also discernible in the growing demand for pure-bred sires of all classes. Farmers who, for various reasons, prefer to breed good commercial stock, are going in increasing numbers to exclusive sources for sires, and, in addition, are gradually paying higher prices, when necessary, to procure the animals they consider best adapted for their purpose. They are getting away from the erroneous impression that line-bred stock are commonly deficient in utility value, and are learning by practical experience that, whatever the relative merits of registered and non-registered sires in outward appearance, the former can be trusted with greater confidence to impart their characteristics to their offspring. Mere registration does not alter the impressive qualities of a sire or dam, but without the authentic certificate of lineage there is no warranty of purity. The increasing stringency of buyers for exportation, concerning pedigree and identification markings, is significant.

Whether there would be substantial gain in production, if the proportion of registered stock was greatly increased, may be an open question. In ordinary forms of animal husbandry the carefully selected cross-bred is not easily excelled. As a utility animal it approaches perfection. This class, however, is the direct product of the registered breeds, and, without a plentiful supply of line-bred stock to provide the material for the utility cross-breds, the ordinary commercial animals of the country would be still less valuable than they are at present.

The object of the scheme recently revived by the Ministry and now being administered with discreet activity in the different counties, is to encourage and facilitate the use of registered sires for the raising of commercial stock. The supply of pure-bred bulls and other sires is abundant in some breeds, but in others the work would be simplified if a larger number were available. The scheme does not aim at changing the breed or type of animal in a district without the approval of the local owners and the warranty of actual results; the idea is to raise the utility value of existing classes, by placing at the service of farmers sires calculated, in breeding and individual merit, to achieve this purpose. Animals suitable for such a scheme should be able to show a recorded lineage. It is not enough that a sire should be without alien blood; if he be the result of promiscuous mating within the limits of his own breed register, he will probably lack the power to breed true—the impressiveness that springs from concentrated and selected purity."

A Significant Swine Fever Case.

It is interesting to learn that in Glasgow last month a pig feeder, charged with having had in his possession a number of pigs affected with or suspected of having swine fever and failing to give notice of the outbreak to the authorities, was found guilty. He was further charged with having exposed twenty pigs for sale in one market and fifteen pigs for sale in another market, all these pigs being diseased or suspected of being diseased. He was found guilty on this count also. It was proved that nearly all the pigs disposed of in the markets had died of swine fever within a short time of the sale. The Courts imposed a fine of £100 with two months' imprisonment as an alternative. The Ministry of Agriculture, through its inspectors, has traced pigs that this dealer sold. The certificates in its possession show that the fifteen sold on the 8th December were all suffering from swine fever ten days later. The twenty sold on 6th December were disposed of to different farmers, and introduced swine fever on eight sets of premises. Considerable though the penalty is, it will be agreed that it was not excessive. Swine fever is a trouble that spreads rapidly, and, as is well known, in places where there is an outbreak it is impossible to keep pigs for some time. The infective agent is ultra-microscopical and the period of incubation uncertain. The disease is scheduled under the Act of 1894, and its existence, or even suspected existence, must be notified to the police in accordance with the Swine Fever Order of 1908. If follows, then, that in the interests of the pig-keeping industry every owner of pigs is bound

to take all reasonable care. In this trade, as in all others, there is a certain amount of wilful carelessness, even of fraud, but if the Petty Sessional Courts before which cases like the one referred to above are brought will only deal with them on the same salutary lines, it is safe to say that the business of trading suspect animals will become unpopular.—*Ministry of Agriculture and Fisheries.*

Damages for Lead-Poisoned Cow.

The death of a cow from lead poisoning was the subject of an action raised at Edinburgh Sheriff Court by James Oliver Elliott, shepherd, Tynehead Farm, Tynehead, Midlothian, against the North British Railway Company.

The shepherd, to whom the cow belonged, sued for £52 as compensation.

Sheriff Orr, in giving his decision, held that the cow had died from acute lead poisoning contracted by eating rags with paint on them. The rags were eaten not more than forty-eight hours before the cow died.

The cow grazed on a field adjoining the railway line at Tynehead Station, and some servants of the Company had deposited a quantity of rubbish containing poisonous rags in a belt of trees forming part of the field.

His lordship held that the cow was poisoned through the negligence of defenders' servants, and assessed the damages at £52.

Dairy Show Popularity.

The report of the special committee adopted at a meeting of the British Dairy Farmers' Association held in London on May 4th under the chairmanship of Earl Dartmouth, showed that a new class for bacon at the Dairy Show to be held on the 18-21st October next had been instituted for pig breed societies. Mr. S. R. Whitley had very kindly offered a 25-guinea challenge trophy for the winner, and in addition the association was offering gold, silver, and bronze medals as prizes. Further, a valuable challenge trophy had been generously offered by Lord Bledisloe to be awarded annually at dairy shows to the breed society adjudged to have the best exhibit of good all round dairy cows—the latter to be six in number. The following additional offers of prizes had been accepted with best thanks:—British Friesian Cattle Society, £46; Red Poll Cattle Society, £36; Lord Desborough, cup value £10; Shorthorn Society, £10; Dairy Shorthorn Association, £10; S. Devon Herd Book Society, £10; English Guernsey Cattle Society, £10; Devon Cattle Breeders' Society, £10; English Kerry and Dexter Cattle Society, £10; A few Shorthorn Breeders, £20; Mr. Reginald Pease, £3; Elkington and Co., Ltd., cup value £7; Miss A. Amici-Grossi, £3 3s 0s.; English Jersey Cattle Society, gold, silver and bronze medals.

On the motion of Lord Bledisloe a resolution of congratulation was unanimously passed and conveyed to Mr. S. R. Whitley, the able and energetic chairman of the show committee of the association, on the appointment of his brother, the Rt. Hon. J. H. Whitley, M.P., as speaker of the House of Commons and the first commoner of England.

"*Lord High Everything.*"—Under this heading and with the following as a sub-title, "Dungannon's Own Poohbah," the *Belfast Telegraph* announces—"Dungannon Urban Council, at their quarterly meeting on Monday evening, appointed a sub-sanitary officer and town inspector at a salary of £70, with uniform. The duties will include, in addition to his present position as assistant water inspector and plumber (including the care and lighting of the street lamps), *inspector under the Dairies and Cowsheds Order, food and drugs inspector,* hackney car inspector, shops inspector, town court summons-server, collector of weekly custom, and assistant in the market square while the market superintendent is absent on other market business, inspector of eggs under the Department's instructions, rent collector for the Milltown and Donaghmore Road artisans' dwellings.

Horse Societies and Docking Prohibition.

The Bill to prohibit the docking of horses was discussed at a Council meeting of the Hackney Horse Society, at which Mr. Brandt (President) presided. It was stated that if such a Bill without qualification of any sort were passed the injury done to horse breeding in the national sense would be irreparable. The possibility of getting the reins under the tails of the animals is always present when horses are driven, especially with the types of vehicles which are used in England. It was insisted that the question of pain or cruelty did not arise, as it is already sufficiently covered by an Act which provides that any operation, including docking, must be accompanied by the use of a general or local anæsthetic of sufficient power to prevent pain. Hackney horses for generations have been docked, and the practice would certainly not have been continued had some advantage not been derived from it. It was resolved to oppose the Bill and to communicate this opinion to the Ministry of Agriculture.

At a special meeting of the Council of the Shire Horse Society at Hanover Square, W., Sir Walter Gilbey, Bt., presiding, a resolution was unanimously adopted, protesting against the private Bill introduced in the House of Commons to prohibit the docking of horses, and viewing with alarm the result such a measure would have on the breeding and using of cart horses in agriculture. It was decided to send a copy of the resolution to the Minister of Agriculture.

Liver Fluke Fight Progress.—The *Manchester Guardian's* Barmouth correspondent recently interviewed Mr. Wynne Williams, county veterinary surgeon, who, along with other officials, has been experimenting on sheep affected with "fluke" in Merionethshire. On one farm alone over 400 sheep died, and the disease had baffled the Government experts for some time owing to its sudden effects. Sheep which were healthy in the morning were found dead at night.

Special treatment was used on affected sheep three weeks ago. That week all the sheep given treatment showed signs of regaining flesh.

The disease had disastrous results in Anglesey, where thousands of sheep died. The recent discovery has created much interest amongst the farmers of North Wales.

Humane Killer Drawback.—Sir Almroth Wright, F.R.S., lecturing at St. Mary's Hospital, London, made reference to the relative advantages of the pole-axe and of the pistol as a method of killing animals. He stated that he had been informed that the pistol was unsatisfactory, because the flesh of animals killed by this weapon decomposed rapidly, whereas animals which were pole-axed remained fresh much longer. The explanation of this difference is to be found in the fact that animals shot through the head by a pistol fall down in convulsion, while such convulsions are absent after the use of the pole-axe. These convulsions cause the flesh to become acid, and the acidity hastens decomposition.

A Natural Conclusion.

Harkins, who had taken his children to a country place during the holidays, was proceeding across the field with Louis, the youngest, when the latter saw a cow for the first time.

"What is that?" asked the child.

"That's a cow, my son."

"And what are those things on her head?"

"Horns."

And the two then moved on. Presently the cow mooed, whereat Louis was surprised.

"Which horn did she blow, father?" he asked.—*Harper's Magazine.*

Imperial Live Stock Insurance Company, Limited, have converted an old town mansion into up-to-date offices to meet the growing demands of business, and are now moving to their new address, Imperial House, 27 Cavendish Square, London, W.1, corner of Holles Street.

The British Percheron Horse Society have arranged to make Imperial House their home in the future, and several other Breed Societies are in negotiations for rooms.

"Buried" Skeletons of Famous Horses.

A *Daily Graphic* correspondent writes interestingly concerning the fate of the skeletons of certain record and history-making horses. He says:—"The Prince, I notice, has presented the skeleton of his famous Arab stallion, Dwarka, to the Natural History Museum in South Kensington, and it is now being prepared for erection.

I suppose it will be kept hidden away in the basement along with that of Eclipse, the father of the English turf, which was recently presented by the Royal College of Veterinary Surgeons, as a place could not be found for it in the big room where the skeletons of King Edward's famous Persimmon and the Duke of Portland's St. Simon now stand.

If those bones could only speak!

I always thought the skeleton of Eclipse was the most interesting in London. But to-day—the centenary of the death of Napoleon—many people would think differently, for the skeleton of Napoleon's famous charger, Marengo, stands in the Museum of the Royal United Service Institution in Whitehall.

Marengo was only a Barb pony, grey in colour, and came to Napoleon after Aboukir, but he carried him at the battles of Marengo (where he got his name), Austerlitz, Jena, Wagram, the retreat from Moscow, and Waterloo, where he was wounded in the quarter. He then came into the possession of General Angerstein, who presented his bones to the museum.

Cattle Importation Question.

At a conference of agricultural interests, held in London to consider the attitude to be adopted towards the appointment of a Royal Commission on the importation of store cattle, the Earl of Northbrook, who was present on behalf of the Royal Counties Agricultural Society, moved: "That this conference of representatives of Chambers of Agriculture, Breed Societies, County and Principal Agricultural Societies, and other bodies interested, do hereby resolve to oppose the proposed importation of store cattle from abroad into this country, and agree that steps be taken to prepare and present the case to the Royal Commission which has been appointed to conduct an inquiry into the question."

The resolution was seconded by Lord Bledisloe and carried unanimously.

A committee under the chairmanship of the Marquess of Crewe was appointed to carry the resolution into effect.

In a report issued by the Department of Agriculture and Technical Instruction for Ireland on proceedings under the Diseases of Animals Acts for the year 1919, Mr. D. S. Prentice, Chief Inspector, Veterinary Branch, states that at certain Irish ports there is still room for improvement in the arrangements for feeding animals prior to their shipment, and some of the inspection yards in which the animals are detained before exportation continue to be unprovided with means for securing the issue of a proper food ration to the animals.

Casualties to live stock in sea transit were remarkably few, and represented a very small portion of the total number of animals shipped.

A Paris telegram says M. Lecainche read to the French Academy of Sciences recently, a note written by Dr. Lebailly, who had failed to communicate to a man the fever of foot-and-mouth disease, after inoculating him with the virus of cattle suffering from the disease.

The Progress of Milk Recording.

It may be remembered that the Milk Recording Scheme was inaugurated in the years of the war, and in the exceptional circumstances that prevailed progress was necessarily slow, but during the year 1916-17, nearly 13,000 cows were recorded in England and Wales. In the following year the number was 20,000, a year later 38,000, and last year 60,000. This number will undoubtedly be increased very considerably during the present year. Certificates are issued by the Ministry for milk-recorded cows, giving not only the official milk yield of the cow, but also her summarised history for the period covered by the certificate. As much as £285 was paid last year for a *non-pedigree* cow with an official milk record certificate, and it is evidence of the farmer's recognition of the practical value of the new development that while 640 certificates were applied for in 1916, the number applied for in 1920 was nearly 18,000. It is noted too that, of the cows certificated last year, 800 gave over one thousand gallons, and two very exceptional animals two thousand gallons. It will be remembered that grants are made by the Ministry to Milk Recording Societies to meet up to half the expenses of the Society. Grants are based on the number of herds in the Society, and amount to £3 10s. per herd per annum for a new member, and £3 for a member who has been in the Society over two years.

Nowadays the farmer knows what his cows are doing for him and he sees to it that every cow earns her own living. The variation in the value of the milk produced per cow in different herds is very striking. For example, in taking some figures for the year 1919-1920, it was seen that the average cow in the best herd gave £66 worth of milk, calculated at 1s. 6d. per gallon. The average cow in the average herd yielded £47 worth of milk, and the average cow in the worst herd £37 worth of milk. In one county the Milk Recording Society has increased its membership from 19 members with 20 herds in 1914, to 82 members with 69 herds in 1920. This Society has joined the Societies of neighbouring counties in holding co-operative shows and sales, and as the cows sold have all had certified milk records, they have obtained far higher prices than would have been paid for them had such records been lacking. In spite of the fact that all the cows belonging to this Society which were sold at these sales were non-pedigree, one fetched as much as £146 at the last sale and the average was no less than £75. These figures are indeed a striking comment on the success of the milk-recording scheme.—*Ministry of Agriculture and Fisheries.*

The Movement towards Live Stock Improvement.

Although a policy of the closest economy has been imposed upon all Government Departments, and it has been found necessary to abandon many schemes of interest and value, the policy of improving the live stock of these islands still receives a measure of support, and for the financial year now opening (1921-1922) it has been found possible to allocate a sum of £35,000 for use in England and Wales. Of this amount, £18,000 is set aside for grants for bulls, £7,800 for milk-recording societies, £7,250 for heavy horses, and £3,000 for boars. The provision covers grants for 900 bulls, 600 boars, 100 heavy horses and for a few rams which will be used in North Wales, this last being a comparatively new experiment. The value of the grants is very considerable; it is both direct and indirect. For example, the live stock scheme can claim to have led to the formation of several new breed societies with consequent improvement, both in the class of the animal and in the price paid for it. It is noticeable too that, during the period when the slaughter of calves was at its height, very few calves sired by subsidised bulls went for slaughter. It was clear that those who had bred a good calf were not disposed to see it turned to veal. The mere fact that it had good parentage was sufficient justification for an effort to rear it. Then again, there is a very brisk private market in premium sires and although they

may be bought in the first instance at quite a low figure, that figure tends to rise very considerably as soon as their worth is proved. For example, a boar bought for twenty guineas under the live stock improvement scheme was sold some time later for six hundred, while a subsidised bull sold for service in a pedigree herd sired nine bull calves which averaged upwards of five hundred guineas apiece. Figures of this kind have an eloquence that is irresistible. The heavy horse grants have been found to encourage co-operation among farmers for the hire of good class stallions, and those who know how careless the farmer was in this regard only a few years ago will admit the ample room for improvement. Quite apart from results that have in them something of a sensational element, live stock officers of the Ministry are able to record a state of general progress. For example, it is reported from one farm that the calves bred from a premium bull made £10 more per head than others born on the same farm from another sire. The possibility of securing good strains has led to the establishment of several new herds of shorthorns in various parts of the country. In one instance a bull bought under the live stock scheme for £240 was sold for 550 guineas to go abroad, while another that cost 43 guineas under the scheme ultimately reached the Argentine, where it fetched 550 guineas. The owner of one of the Society's bulls won first prize at the Royal Norfolk Show and has refused £250 for the animal. At the same time it is noticed that service fees are much higher than they were, and are paid without complaint for the use of registered sires.—*Ministry of Agriculture and Fisheries.*

Light Horse Breeding.—State Encouragement.

For ten years past the Ministry of Agriculture has devoted about £30,000 per annum to assisting and encouraging the light horse breeding industry in England and Wales. The methods adopted fall under three heads :

(1) Licensing (formerly registration) of sound stallions to travel through the country for service on the farms.

(2) The award of premiums to the owners of those thoroughbred stallions which travel at a nominal service fee of £1.

(3) The leasing of brood mares to farmers.

It may be remembered that the Horse Breeding Act of 1918 superseded the earlier system of voluntary registration introduced in 1911. The Act of 1918 came into operation last year, when no fewer than 3,750 stallions were licensed by the Ministry. This good work is still in the initial stage and some years may elapse before the full benefit is felt throughout the rural areas of England and Wales, but it is not too early to note with satisfaction the elimination of large numbers of the unsound stallions that could be met along any country road in the late spring and early summer and were travelled profitably, for their owners, on account of the low service fees charged. It has long been a reproach against a certain class of farmer that he has been prepared to accept for his stock any sire for whose service the price was low, and the result has been that in this country where the finest animals are to be found, there is a great residue of the very worst. The Horse Breeding Act is gradually putting an end to this condition as far as horses are concerned, and those who travel an unlicensed stallion to-day, commit an offence for which the penalty is not inconsiderable. All things considered, the Act has worked smoothly ; complaints have been few and there have been sufficient prosecutions to enable those who have no regard for the objects of the Act to realise that it is a force that must be respected. In the current estimates provision has been made for premiums to one hundred thoroughbred stallions and a number of Welsh cobs as well as riding, fell, dale, mountain and moorland ponies.—*Ministry of Agriculture and Fisheries.*

It is not at present proposed to reintroduce the Milk and Dairies Bill.

Fires, believed to have been deliberately started, were discovered on ten different farms in Lancashire and Cheshire recently. The loss in buildings and farm produce is estimated at from £20,000 to £30,000.

Sour Milk Substitutes for Controlling 'Coccidiosis'. —Preliminary results of investigation by Beach of the efficiency of several of the commercial sour milk substitutes for controlling coccidiosis appear to indicate that some of them may be of value and, therefore, can be used in place of ordinary sour milk for this purpose.—(*University of California, College of Agriculture, Annual Report of Director for* 1919-20.)

At the public dinner of the Ayrshire Herd Book Society held recently, Mr. J. Harling Turner, Cessnock Castle, Galston, gave " The Ayrshire Herd Book Society." Without the Ayrshire cow they could never have attained the position this country occupied in agriculture. He congratulated them on the success of that day's show. He had heard it on all hands described as the best show of one breed ever brought together. The mission of the Ayrshire cow was to produce milk. No breed of dairy cows could excel the Ayrshire as there shown. She was more easily kept, had a better constitution, and paid more for her keep than cows of the same class of any other breed. The mission of that show was to prove these things. Judging at such a show as they had seen that day was no sinecure. The cow they wished to have in their byres was the luggie filler. The cattle must (1) be bred on milking lines ; (2) milk records must be honestly kept ; (3) the tuberculin test must be improved and other methods of application besides the sub-cutaneous, such as the eye test and the tail test, resorted to as controls. These they had been told by their Transatlantic friends were necessary reforms at which they should aim. With respect to the last, he maintained that tuberculin should only be obtained from a Government laboratory, and it should only be given and allowed to be used by qualified veterinary surgeons. They should do everything in their power to prevent the exportation of unworthy specimens.—*The Scottish Farmer*, February 12th.

The Dangerous Drug Difficulty.—The *British Dental Journal*, of recent rate, remarks, " Yet another Government department is meeting with trouble in its efforts to protect the health of the community. The Home Office has . . . trenched upon the rights and methods of practice of various professions. . . . It hampers and restricts the pharmacist in his dispensing operations, and the dental surgeon and the veterinary surgeon, while they may use certain of these drugs, are prevented from writing prescriptions containing them. In its efforts to stamp out what is universally recognised as a terrible evil, the Home Office is assured in advance of the hearty co-operation of every member of the above-mentioned professions, but that may be secured without the imposition of irksome and unnecessary restrictions upon the recognised methods whereby these professional men have acted in the relief of pain and in the treatment and cure of disease."

Commerce in Serums and Vaccines.—" If the public were aware of the chaotic conditions that at present obtain in this country in relation to serums, vaccines, and such substances, they would," said an official of the Ministry of Health, interviewed by a Press representative, " welcome a carefully reasoned method of procedure for ensuring uniformity and control." This country, he explained, is one of the few which has no control over serums and vaccines. A Departmental Committee has just reported in favour of standardisation and control. This Committee took evidence from medical and scientific authorities, and also from representatives of the great chemical manufacturing firms. All agreed that some measure of standardisation and control was necessary.—*The Observer.*

Goat Rules Road in Switzerland.

The goat is held in high esteem in Switzerland and is carefully protected by legal regulations. If a boy plagues a goat he can be fined and sent to gaol. If a person meets a goat on a path and drives him aside he can be arrested. If a railroad train driver sees a goat on a track the train must halt until the animal can be coaxed to remove himself.—*Journal American Veterinary Medical Association.*

Lambing Season Notes.

Experience has shown that, in normal circumstances, successful lambing depends largely on the care of the ewe flock during the months preceding that important period. It is generally admitted that ewes do best when they have been in fair condition at the time of conception. This means that their keep has not been too meagre. In fact, special feeding for three or four weeks before the period in question is an advantage in many ways. The necessary treatment must depend on the foods available. Certain foods, such as turnips, rape, mustard, and clean fresh grass have a marked influence. Second-growth rape is considered bad in some districts. Running the ewe flock over the young "seeds" is practised successfully. The method is known as "flushing." It is not as a rule practised with Cheviots or Blackface, and to a relatively small extent with Border Leicester and half-breed flocks. In addition to succulent green food it is customarg to feed a little cake, oats, dried grains or maize, about ½ or ¾-lb. per head per day. The influence of flushing on yield is accepted and has been marked even in the case of Blackface sheep although they are unaccustomed to such treatment.

In the interval before lambing it is important to see that the ewes do not fall off in condition. Among available foods, roots, whether swedes or turnips, must be used with care lest an ill-balanced ration cause trouble. The average dry matter in swedes is about 12 per cent., while in white and yellow turnips it ranges from about 7 to rather over 10 per cent. If then the rest of the ewes' keep is also watery, the diet will not be favourable to the production of sound lambs. Any change of diet must be brought about gradually, as sudden alterations are productive of trouble. Another essential point when dealing with hill flocks is the provision of suitable protected positions to shelter the ewes in bad weather.

The ewes likely to lamb early are yarded for the night, but it is better to keep others out until nearer their time, in case foot-rot should break out. Ewes that have once lambed should be so fed as to maintain their flow of milk; turnips are good for this purpose, but when roots are super-abundant care must be taken not to over-feed. Roots should be supplemented with good sweet hay. In some districts second crop or aftermath hay is hoarded carefully because of its reputed value to ewes in milk. The lambs' progress depends to a greater degree on their food than on the weather. Barley meal must be used with care, as it is heating and may cause digestive troubles; on the other hand, it is valuable in wet seasons when the young grass is coming away too quickly. Mangolds are appreciated in lambing time and many farmers whose crop is limited keep this root jealously for that period. In other parts kale, cabbage, vetches, rye and rape are grown because they can be consumed on the land with a minimum of labour. Where lambing ewes have been receiving cake or oats, the allowances should be maintained. Rock-salt in the troughs is to be recommended as it is eagerly sought and appears to satisfy a natural desire.—*Ministry of Agriculture and Fisheries.*

Fat Stock Importation Conditions.

In view of the arrival in this country a few days ago of a consignment of live cattle from America—the first consignment of the kind that has reached these shores since the war—it is of interest to point out the conditions that govern the trade in fat stock from foreign countries. Under the Diseases of Animals Act, the Ministry of Agriculture is under obligation entirely to prohibit the landing in Great Britain, even for immediate slaughter, of animals from any country where the stock is known to be in an unsatisfactory condition or where the sanitary laws regulating the import and export of animals fall short of the Ministry's requirements. Attendant circumstances of shipment must also be such as will afford reasonable security against the importation of animals affected with foot-and-mouth disease. It is in exercising the powers conferred by the Diseases of Animals Act that the Ministry has made Orders prohibiting the landing of animals for slaughter from all European countries and from nearly every other country except Canada and the United States. Considerable difficulty attended the landing of foreign animals in this country for exhibition or other kindred purposes, but as far as all other cattle, sheep, goats, ruminants or swine are concerned, they must be slaughtered at the ports within ten days of landing. Further, animals may be landed only at a Foreign Animals Wharf, that is a wharf so defined for the purpose by an Order of the Ministry of Agriculture. The Ministry must be satisfied in the first instance that the wharf is so constructed as to provide against risk of introduction or spread of disease, but the actual provision of premises for such a wharf is a matter for commercial enterprise. — *Ministry of Agriculture and Fisheries.*

The International Institute of Agriculture at Rome.

From time to time the Press of this country publishes statements of the condition of cereal and other crops throughout the world, stating that these emanate from the Imperial Institute at Rome, but very few people are aware of the origin or constitution of this Institute or of the important work that it carries through in the interests of international agriculture. The origin of the Institute dates back to 1905, when it was founded in accordance with the terms of a Convention signed by the representatives of some forty different states. Since the year of its foundation other Governments have signed the Convention, and to-day it may be said that the whole civilised world contributes to the only international organisations of an official character established by a formal treaty between different states, managed and controlled by representatives of those states and supported by their joint contributions. As an international organisation of an official character it may indeed bz said to have been the first of its kind in the world; it existed prior to the formation of the League of Nations, and indeed it enjoys the universal support that the League has not yet obtained. The origin of the Institute is interesting. The late Mr. David Lubin, of the United States, realised that the farmers of the world could not combine to adjust their cultivation to world needs so long as they remained isolated and did not know what those needs were. He therefore proposed to the King of Italy the establishment of an International Institute to study the conditions of universal agriculture, publish returns, collect and disseminate information on economic and technical agricultural questions, and so facilitate production and aid agriculture throughout the world. The king not only took up the idea with great enthusiasm, but helped to erect the magnificent buildings that house the Institute in Rome, and transferred to it revenues worth £12,000 a year. The chief object of the Institute is to prepare reliable reports of the estimated production of crops and available supplies throughout the world, and it was hoped that this information would prevent the cornering of crops on the one hand and violent fluctuation in price on the other. Bearing in mind the extent of international trade in foods and the essential unity of agricultural science, the importance of the information that the Institute circulates will be understood. It is managed by a permanent committee composed by representatives of the various signatory Governments resident in Rome. From time to time a General Assembly of delegates, appointed by their Governments, reviews the main prin.

ciples of policy. Before the war this General Assembly met every two years, while the permanent committee meets at least once a month, and several of its members devote themselves entirely to the Institute's work. At present the International Institute of Agriculture is organised under three sections: (*a*) Statistics; (*b*) Agricultural Intelligence and Plant Diseases; (*c*) Economic and Social Intelligence. Each issues a bulletin in several parts as well as occasional leaflets and notices to the Press. The Institute also publishes an annual statistical review of the world's agriculture and an annual summary of agricultural legislation. Other publications are issued from time to time, and a bureau which is now part of the Institute deals with internal administration and finance. A meeting of the General Assembly was held in November last, and this was the first for seven years, the operations of the Institute having been curtailed by the war.—*Ministry of Agriculture and Fisheries.*

Liver Fluke Treatment in America.

In view of the outbreaks of liver fluke in sheep and the extremely heavy losses that owners of ewe flocks have suffered in Wales and elsewhere, it is interesting to see how the problems associated with this troublesome disease have been met in the United States, whose Department of Agriculture is second to none in the world for efficiency. The Farmers' Bulletin (1150) deals with parasites and parasitic diseases of sheep, and after discussing the allocation, appearance, life history, distribution and symptoms of the common liver fluke it proceeds to discuss remedies and preventive measures. Under the heading of treatment, the writer, Mr. Maurice Hall, of the Zoological Division, says that two satisfactory remedies have been found in male fern and kamala—the latter being probably some preparation derived from a tree found in India and the East Indies, belonging to the spurge family, and consequently containing an acrid resinous juice of certain medicinal value. The oleoresin of male fern is given by the mouth in doses varying from three-quarters of a teaspoonful to one-and-a-quarter teaspoonfuls, according to the size of the sheep, and two-and-a-quarter teaspoonfuls of a non-purgative oil. This treatment is carried on in the morning two hours before feeding for three days, and the male fern should contain from 24 to 25 per cent. of filicine and 3.5 per cent. of filicic acid. Powdered kamala is administered to sheep in two doses of 7·5 grams at intervals of twelve to twenty-four hours. In the case of a strong sheep the 15 grams may be given in a single dose; in the case of weak ones the dose may be divided into as many as five parts. Sheep are said to be very dull from three to five days after treatment, lying down a great deal and eating little. The flukes are said to die in three to eight days, and the writer of the Bulletin advises that a veterinary surgeon be called in to give the drugs.

On the question of prevention much that is interesting is said, and the general line of effort is that with which our own practice has made us familiar. The draining of swampy areas, or their strict fencing in case draining is not practical, is advocated, together with dressings of lime and salt on pastures in the early summer months, isolation of infected sheep, and safe drinking supplies in case infection should be water-borne. It is stated in the Bulletin that sheep never become infected with flukes on salt marshes. At the Oregon Agricultural Experimental Station an experiment has been tried by adding blue stone to standing water or streams in pasture, and thereby destroying the snails which are necessary intermediate hosts of liver fluke. The proportions of copper sulphate to be used are one to a million parts of water, and this is sufficient to kill snails in forty-eight hours, but it will not affect the eggs. Consequently it is suggested that the treatment should be repeated two or three months later, after the eggs hatch, and we are assured that the treatment is not injurious to higher plants and animals, and will not affect bathing, drinking or irrigation adversely, but it may prove injurious to fish.—*Ministry of Agriculture and Fisheries.*

Tuberculous Udders.

A veterinary authority with a wide experience of examining cows suspected of giving tubercle-tainted milk has expressed the view that the manipulation of the udder and glands is of no value in diagnosing the presence of the disease. The only reliable means of detecting the cow which is giving infected milk he regards as microscopical examination for the presence of the bacilli. Even this test needs to be corroborated by the inoculation of guinea-pigs, because in one case a cow kept under observation for a period of three months, during which she retained the appearance of health and showed no departure from the normal in her udder, was continuously eliminating tubercle bacilli in her milk. This was proved by the guinea-pig inoculation test, though the microscope was unable to show the presence of any tubercle bacilli. As a corollary to this, it is of interest to learn that the workers in the Health Department of the Agricultural College in California have pronounced definitely on the reliability of commercial pasteurization in safeguarding milk used for human consumption. According to the report published in the monthly "Bulletin" of the California State Board, the investigators state that "they found that naturally infected milk from a certain herd of cattle which had reacted to the tuberculin test contained live tubercle bacilli; when inoculated into guinea-pigs the milk regularly killed them with tuberculosis. After careful pasteurization . . . the same milk failed to produce tuberculosis in any of the animals." The foregoing facts show that the weeding out of tuberculous milkers from dairy herds is and must be a process at once slow and difficult. It is a problem which calls for the combined effort of both the medical and the veterinary practitioner. In quieter and more peaceful times it may be tackled, and there is no question of the extent to which, if solved, it would reduce infantile mortality and ensure a hardier and more virile population. Meantime, the value of pasteurized milk and the minimum danger of infection it carries should not be lost sight of by producers and consumers alike.—*Farmers' Gazette.*

The Dulverton (Som.) magistrates have granted exemptions from licence in respect of 276 dogs on farms.

To the Fellows and Members of the Royal College of Veterinary Surgeons.

I ask for your Vote and interest in the forthcoming Election to the Council of the Royal College of Veterinary Surgeons.

I wish particularly to represent the general Practitioners, but if elected I will do my best for the benefit of the whole profession.

GEOFFREY HERBERT LIVESEY, M.R.C.V.S.
66 Church Road, Hove, Sussex.

Nonimators:—
J. Basil Buxton, F.R.C.V.S., D.V.H., London.
Charles Robert, M.R.C.V.S., Tunbridge Wells.

Correspondence.

Letters to the Editors should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

Veterinary Education in India.

Sirs,—With reference to the unfortunate correspondence which has taken place under the above heading around Mr. Dalrymple Hay's name, I feel that, by reason of the

fact that I have spent the last ten years of my service in the I.C.V.D. in Mr. Hay's old province, viz., the Madras Presidency, I should do something to clear up the misunderstanding, and at the same time give Mr. Hay all the credit that is due to him for the part he took in furthering veterinary work in the Madras Presidency, without exaggerating its importance.

It is incorrect to say that Mr. Hay had anything to do with the success of the Madras Veterinary College, other than very indirectly, and I fail to see how he could have had any influence on the other Veterinary Colleges in India, but it is a fact that he did a considerable amount in the districts of Madras to help the C.V.D. in the early days of its existence there.

Due, I believe, to a friendship formed with Professor Woodruff, when the latter was at the R.V.C., Camden Town, Mr. Hay made a hobby of veterinary work, and on his return to India from leave he endeavoured, during his official tours, to induce the people to adopt western veterinary treatment, particularly castration. So enthusiastic was he in this that to the older residents in Madras the names "Dalrymple Hay" and "castrator" are almost synonymous to this day.

In addition, he always took a great interest in the veterinary hospital of the town in which he happened to be stationed, and several of them still contain a reminder of this in the form of instruments presented by him.

Government recognised his help to the community by conferring on him the Kaiser-i-Hind medal.

Cynics may think that this served him right for interfering in other people's business, but those who have worked in India will know what a help it is to have a European official on the spot taking an intelligent interest in a remote veterinary hospital, which is probably inspected by the head of the C.V.D. only once or twice a year.—I am, Sirs, yours faithfully, F. WARE.

Epping, 2nd May, 1921.

Army Veterinary Service.

THE LONDON GAZETTE, WAR OFFICE—REGULAR FORCES.

May 3rd.—Temp. Captain W. E. Barry to be Captain (May 4th, with seniority, April 29th, 1920), and precedence next above A. H. Morris.

May 5th.—Lt.-Col. F. D. Hunt, O.B.E., retires on retired pay (May 6th).

May 6th.—Temp. Capt. W. H. Anderson relinquishes his commission on completion of service (November 8th, 1919), and retains rank of Capt.

TERRITORIAL FORCE.

May 5th.—Captain A. J. Beckett resigns his command (May 6th), and retains rank of Captain.

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaughtered as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange. Outbreaks reported by the Local Authorities.	Parasitic Mange. Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Week ended 30th April, 1921 ...	...	...	6	6	...	...	...	...	32	39	7	27	13
Corresponding Week in 1920	...	...	10	10	...	128	...	...	61	89	4	55	16
Corresponding Week in 1919	12	...	3	4	...	...	1	2	128	219	2	50	15
Corresponding Week in 1918	...	...	2	2	...	...	...	1	85	143	2	49	16
Total for 18 weeks, 1921 ...	18	1	220	259	27	2657	3	6	1241	1937	358	425	127
Corresponding period in 1920	4	...	176	209	42	2432	9	16	2186	3808	271	795	269
Corresponding period in 1919	67	2	67	92	19	1033	6	30	2704	5298	209	472	164
Corresponding period in 1918	...	...	115	130	...	...	13	37	2314	4446	224	372	130

NOTE.—The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

IRELAND. Week ended 30th April, 1921	...	...	...	...	...	...	Outbreaks 1	1	1	1
Corresponding Week in 1920 ...	...	...	...	...	...	...	4	3	...	1
Corresponding Week in 1919 ...	...	...	...	...	...	...	1	...	...	...
Corresponding Week in 1918 ...	...	...	...	...	...	...	...	3	...	...
Total for 18 weeks, 1921	...	...	2	41	...	...	38	130	23	163
Corresponding period in 1920 ...	1	1	...	...	1	3	60	142	4	16
Corresponding period in 1919 ...	...	...	...	...	1	1	57	139	16	57
Corresponding period in 1918 ...	1	1	...	...	...	...	57	154	7	27

NOTE.—The figures for the current year are approximate only.

Department of Agriculture and Technical Instruction for Ireland (Veterinary Branch), Dublin, 2nd May, 1921.